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retical and practical, of the highest topics, not only of science, but of philosophy. Contented to accept no truth upon the evidence of mere tradition or human authority, his opinions upon religious subjects, being those held by the Society of Friends of which he was a member, were the result of deliberate and strong conviction. His fine critical faculty was brought to bear upon the recent Biblical and anti-Biblical controversies, represented, upon the one side, in different modes, by Strauss, Bauer, Comte, Renan and Buckle. In several essays, prepared for special occasions, only one of which, however, has been published, he displayed a calm mastery of these topics, an amount of knowledge and force of argument, such as might be looked for rather in a professed theologian than in an active member of the medical profession.

With all who knew Dr. Edward Rhoads, however, his intellectual endowments, though great, were always perceived to be subordinated to moral qualities more rare and admirable. From early youth, purity of life, unselfishness, refinement and elevation of mind, were his marked characteristics. Few examples so spotless are met with in any profession or sphere of life. In the large assembly which met at his funeral, words spoken by several who knew him well, and whose standard of character was high, were such as might fulfil the aspirations of the most saintly of men, and which very few, indeed, could deserve.

Stated Meeting, Oct. 20, 1871.

Present, nine members.

Curator, DR. CARSON, in the chair.

A letter, acknowledging receipt of No. 86 proceedings, was received from the University of the City of New York.

Donations for the Library were received from the *Revue Politique*; the Astronomer Royal of England; the Editors of *Nature*; the R. Institute of Cornwall; Thomas P. James, Esq.; the Editor of the *Old and New*; the *American Chemist*; *American Journal of Medical Sciences*, and *Medical News and Library*.

A letter was read from Professor Cope to the Secretary, dated Fort Wallace, Kansas, 10th month 9, 1871, giving a preliminary report of his expedition into the Valley of the

Smoky Hill river, Kansas, and descriptions of new fossil sauroids and Chelonians discovered and collected there.

Pending nominations No. 679 and new nominations, Nos. 680 and 681 were read, and the meeting was adjourned.

FORT WALLACE, KANSAS,
October 9th, 1871.

My Dear Prof. Lesley :—

I write to give a brief account of the expedition of seventeen days, which I have just made in the valley of the Smoky Hill river in Kansas. Through the courtesy of Gen. Jno. Pope, commanding the Department of the Missouri, I was furnished with an order on the post commandant at Fort Wallace for a suitable escort. This was furnished by Capt. E. Butler (5th infantry), who spared no pains to make the expedition a success.

We first camped at a spring eighteen miles south of Fort Wallace, and five miles south of Butte Creek. It had a fine flow of water, and being without name I called it Fossil Spring. On a bluff, on Butte Creek, Lieut. Whitten discovered the fragments of a monster saurian projecting from the shale, and on following the bones into the hill, exhumed a large part of the skeleton of *Liodon dyspelor* Cope (Proceeds. A. P. S. for 1870). This was welcome, as the species had been previously known from vertebrae only. The pelvic arch was found perfectly preserved, and the scapular arch and limbs partially so. The iliac bone is slender and straight, slightly expanded at the acetabulum. The ischium has a somewhat similar form, but is curved. The axis of the proximal portion is directed upwards; the shaft then turns into a horizontal direction, and lies beneath and at one side of the vertebral column without uniting with its fellow. The pubes are elongate, but wider than the other elements and flattened. They are in contact in front medially, and have an angulate axis. A short process projects from near the proximal end, on the exterior margin. The femur is a flat bone, slightly constricted medially, and with a decurved and projecting portion of the proximal articular surface on the inner side representing a head. The extremities of the dentary bones are each drawn to an acute point differing thus *toto coelo* from those of the *L. proriger*.

On the same bluff another *Liodon* and a *Clidastes* were found, with five species of fishes.

On examining neighboring bluffs and denuded areas, bones supposed to be those of *Pterodactyle*, two species of *Clidastes*, a *Dinosaur*, a *Crocodyle*, and numerous fishes were brought to light.

In a similar location on Fox Creek canon, one of the escort, Martin V. Hartwell, to whom I am indebted for many fine discoveries, observed the almost entire skeleton of a large fish, furnished with an uncommonly

powerful offensive dentition. The jaws were stout, the dentary bone very deep. The teeth in a single row in all the bones, but of irregular sizes. There are two or three very large canines in each maxillary, and one in the premaxillary, three or four in the dentary separated by an interval. The lack of coronoid bone and many other characters show that it should be referred to the order *Isospondali*, and is probably allied to the herring and the *Saurodontidae*. The vertebrae are grooved, and there is a basi-occipital tube but little developed. The teeth are simple cylindric conic, with smooth enamel, and project two inches above the alveolar border, and each descends an inch into its alveolus. The species and genus are new to our palaeontology, and may be named *Portheus molossus*. It turned out on subsequent exploration to have been quite abundant in the Cretaceous seas. It was probably the dread of its cotemporaries among the fishes as well as the smaller saurians.

On another occasion, we detected unusually attenuated bones projecting from the side of a low bluff of yellow chalk, and some pains were taken to uncover them. They were found to belong to a singular reptile, of affinities probably to the Testudinata, this point remaining uncertain. Instead of being expanded into a carapace, the ribs are slender and flat. The tubercular portion is expanded into a transverse shield to beyond the capitular articulation, which thus projects as it were in the midst of a flat plate. These plates have radiating lines of growth to the circumference, which is dentate. Above each rib was a large flat ossification of much tenuity, and digitate on the margins, which appears to represent the dermo-ossification of the Tortoises. Two of these bones were recovered, each two feet across. The femur resembles in some measure that ascribed by Leidy to *Platecarpus tympaniticus*, while the phalanges are of great size. Those of one series measured eight inches and a half in length, and are very stout, indicating a length of limb of seven feet at least. The whole expanse would thus be twenty feet if estimated on a Chelonian basis. The proper reference of this species cannot now be made, but both it and the genus are clearly new to science, and its affinities not very near to those known. Not the least of its peculiarities is the great tenuity of all the bones. It may be called *Protostega gigas*.

The greater part of a large *Liodon proriger* Cope was found scattered over a denuded surface at one point, his huge truncate, bowsprit-like snout, betraying his individuality at once. Portions of other examples of this reptile were afterwards found. Remains of several species of *Clidastes* occurred at various points in the neighborhood of Fossil Spring. One was found in the side of a bluff fifty feet above the bottom of the cañon; Martin Hartwell exhumed another near the *C. cineriarum* Cope almost complete.

We subsequently left this locality and encamped at Russell Springs on the Smoky Hill, twenty-six miles distant. On the way a large *Clidastes* of some forty or more feet in length was found lying on a knoll of shale, with the head displaying the palatal surface upwards. On the Smoky

our explorations were attended with success. When we shifted camp, it was to go to Eagle Tail in Colorado, whence we returned again to Fossil Spring. The richness of this locality was again apparent, and we added to our collection a number of species. Among these may be mentioned *Liodon ictericus* Cope and two new *Clidastes*. The writer originally pointed out the existence of representatives of the orders *Pythonomorpha* and *Sauropterygra*, in this cretaceous basin. Prof. Marsh's explorations determined the existence of *Ornithosauria* and *Orocodilia*. The present investigation adds *Dinosauria* and perhaps *Testudinata*, or the group that the new form *Protostega* Cope represents.

The preceding account expresses some of the points of interest observed. These, with others, now unnoticed, will be included in a final report.

The giants of this sea were the *Liodon proriger*, Cope, *L. dyspelor*, Cope, *Polycotylus latipinnis*, Cope, and *Elasmosaurus platyurus*, Cope. Of these the first was apparently the most abundant. The second was the most elongate, exceeding in length perhaps any other known reptile. The last named had the most massive body, and exhibited an extraordinary appearance in consequence of the great length of its neck.

For kind assistance, I am much indebted to Capt. Edwin Butler, post commandant at Fort Wallace, to Dr. W. H. King, post surgeon, and to Capt. Wylls Lyman. To Lieut. Jas. H. Whitten and Sergeant W. Gardner, who accompanied the expedition, much of its success is also due.

I am, etc.,

EDW. D. COPE.

Stated Meeting, Nov. 3d, 1871.

Present, eleven members.

Vice President, CRESSON, in the chair.

Letters of envoi were received from the societies at Riga Chemnitz, Wiesbaden, Lyons and Copenhagen, the University of Norway, and the Royal Geographical Society at London.

Letters of acknowledgment were received from the Nassau N. History Union at Wiesbaden, (Proceedings 78-83,) and the Imperial Society of Agriculture and Natural History at Lyons, July 20, (73-81,) requesting the completion of their series, which, on motion, was so ordered.

Donations for the Library were received from the Societies at Riga, Chemnitz, Görlitz, Wiesbaden, Lausanne, Lyons, Liverpool, Glasgow and Salem, Mass., the Berlin Academy, Geological Society, and Archæological Institute, the Austrian Geological Institute, Anthropological Society, Herr von Hauer,